

Claims

1. A process for the manufacture of alkyl N-alkoxalyl-alaninates which comprises
5 reacting alanine with a dialkyl oxalate under substantially non-acidic conditions.

2. A process according to claim 1, wherein the reaction is carried out in the presence of a base.

10 3. A process according to claim 1 or claim 2, wherein the dialkyl oxalate is a di(C₁₋₈-alkyl) oxalate, preferably a di(C₁₋₄-alkyl) oxalate.

4. A process according to claim 2 or claim 3, wherein the reaction is carried out in the presence of a base and said base is a trialkylamine, a cyclic tertiary amine, or a cyclic
15 tertiary amide, or any mixture of two or more of such bases.

5. A process according to claim 4, wherein the base is a tri(C₁₋₈-alkyl)amine, preferably a tri(C₁₋₄-alkyl)amine, pyridine, quinoline, N-methyl-pyrrolidine, N-methyl-piperidine or N-methyl-pyrrolidone, or any mixture of two or more of such bases.
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6. A process according to any one of claims 1 to 5, wherein the molar ratio of alanine to dialkyl oxalate is from about 1 : 2 to about 1 : 10, preferably from about 1 : 3 to about 1 : 6.

25 7. A process according to any one of claims 2 to 6, wherein the molar ratio of base to the reactant alanine or dialkyl oxalate, which is used in the lesser molar amount, is from about 0.25 : 1 to about 2 : 1, preferably from about 1 : 1 to about 1.5 : 1.

8. A process according to any one of claims 1, 3 and 6, wherein the reaction is
30 carried out in the absence of a base and at a temperature from about 120°C to about 200°C, preferably from about 135°C to about 160°C.

9. A process according to any one of claims 2 to 7, wherein the reaction is carried out in the presence of a base and at a temperature from about 60°C to about 160°C,
35 preferably from about 80°C to about 120°C, and most preferably from about 90°C to about 110°C.

10. A process according to any one of claims 1 to 9, wherein the reaction is carried out in such a way as to ensure that as much as possible of the alkanol produced during the reaction remains in the reaction system either by carrying out the reaction under
5 atmospheric pressure with cooling of the vapour phase of the reaction mixture to promote the return of the alkanol into the reaction system, or by carrying out the reaction at elevated pressure in a closed system.

11. A process according to any one of claims 1 to 9, wherein the reaction is carried
10 out in the presence of added alkanol, preferably alkanol featuring the alkyl group corresponding to that of the employed dialkyl oxalate.

12. A process according to claim 11, wherein, the molar ratio of alkanol to the reactant which is used in the lesser molar amount, preferably the alanine, is from about
15 1 : 1 to about 10 : 1, preferably from about 3 : 1 to about 6 : 1.

13. A process according to any one of claims 2, 3 to 7 and 9 to 12 wherein the reaction is carried out under atmospheric pressure in the presence of an organic base by heating the reaction mixture for about 4 to about 12 hours, preferably for about 6 to about
20 10 hours, to a temperature below the boiling point of the organic base, which, depending on the employed organic base is from about 60°C to about 160°C, preferably from about 80°C to about 120°C, most preferably from about 90°C to about 110°C, thereafter removing any low boiling organic base from the reaction mixture by distillation and then increasing the temperature of the reaction mixture up to about 160°C for a duration
25 sufficient to complete the formation of the desired alkyl N-alkoxalyl-alaninate.

14. N-alkoxalyl-alanines of the formula $\text{alkylO-CO-CO-NH-CH(CH}_3\text{)-COOH}$, in particular those wherein the alkyl group is a C_{1-8} -alkyl group, preferably a C_{1-4} -alkyl group, most preferably ethyl.